

[Time: 3 Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:
1. Question no.1 is compulsory.
 2. Attempt any three questions from remaining.
 3. Assume suitable data if needed.

- Q.1 a) Discuss the role of DBA. **05**
 b) Explain the importance of primary key in database. Explain how to crack primary key using sal. **05**
 c) Explain join operations in relational algebra. **05**
 d) Explain null value, and date functions in sal. **05**
- Q.2 a) Explain view serializability and conflict serialization with example. **10**
 b) Discuss the need of normalization in database design. Discuss all normal forms with examples. **10**
- Q.3 a) i) Explain create table command with primary key and not null constraints. **10**
 ii) Write a system to insert value in table (Assume any example)
 iii) Explain count(), sum() function in Sal.
 iv) Explain group by, having clause in Sal.
 v) Explain where clause with suitable examples.
 b) Explain deadlock mechanism in details. **10**
- Q.4 a) Discuss ER notations. Also draw ER diagram for E-learning system. **10**
 b) Explain Query optimization with detailed steps. **10**
- Q.5 a) Explain joins operation in detail. **10**
 b) What is view? How views are different then table. Discuss nested Query with example. **10**
- Q.6 Write a short notes (Any two) **20**
 i) Trigger
 ii) Specialization and Generalization in EER
 iii) ACID properties
 iv) Database Architecture